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EXAMINER	
WILLIAMS, DON J	

ART UNIT	PAPER NUMBER
2878	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/567,672	LILLERUD ET AL.	
	Examiner	Art Unit	
	DON WILLIAMS	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *2/9/06* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/9/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 9, 10, 12 & 16 are objected to because of the following informalities: The reference items enclosed in parentheses should be deleted to avoid confusion of numbered claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

Claims 1 & 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 9, what exactly constitutes “other aqueous organisms? Is “other aqueous organisms” relevant or required claim subject matter in comparison to the “weight or measurement of the fish”? For examining purposes, emphasis will be directed to the weight or measurement of the fish.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a

question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present case, broad term “cameras” is followed by “particularly” or "especially” and then narrow term “CCD-cameras” and claims 1 and 9 are indefinite due to the use of terms “particularly” and “especially”.

Claims 2-8, & 10-16 are inherently rejected due to dependency.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnarson et al (5,184,733) in view of Storbeck (5,142,160).

As to claim 1, Arnarson et al disclose (fig. 1, fig. 2, fig. 4) the recording and estimation of the weight of fish (5) and other aqueous organisms, with a camera (1), particularly a CCD-camera (1), which records pictures (images) in different directions of fish (5) passing the camera (1) in a transfer conduit (6), as the fish (5) is illuminated (fig. 4) from a light source (7, 8), and where the signals (outputs) of the camera (1) are processed in a computer (9), to estimate a value for the volume of each fish (5), for

creating a value for the weight of the fish (5), characterized in that the fish (5) is illuminated by at least two light sources (7, 8) and is recorded by CCD camera (1), where both light sources (7, 8) and the CCD camera (1) are distributed around the circumference of the transfer conduit (6), and that reflected light and/or shadow pictures from generally opposite sides of the fish (5) are recorded, creating a compound image recording of the transverse dimensions of the fish (5) in several positions over its length and around its circumference which are used as a base for the estimation of the weight of the fish (5), (Abstract, column 2, lines 36-45, column 3, lines 13-27). Arnarson et al is silent of explicitly disclosing a second camera. Arnarson et al and Storbeck are related in determining the volume and weight of a fish. Storbeck discloses a CCD camera (4) is connected to a computer (7) to determine the weight of the fish (F), (Abstract, column 1, lines 29-45, column 2, lines 1-25). It would have been obvious for one of ordinary skill in the art to modify Arnarson et al in view of Storbeck to incorporate a second CCD camera in order to detect the reflected light from the fish and to output the reflected light into the processor resulting in analyzing the reflected light to determine the weight of the fish.

As to claim 2, Arnarson et al.as modified by Storbeck wherein Storbeck further discloses (fig. 2) an illumination (3) and recording of reflection and/or shadow area (F) across the transfer conduit (6) by means of a light source (3) and a CCD-camera (4), said CCD-camera (4) being arranged at the light source (3) and/or diametrically opposite, (Abstract, column 2, lines 1-25).

As to claim 3, Arnarson et al. as modified by Storbeck where in Storbeck further discloses (fig. 2) that the illumination (3) and the recording (4) are made cyclically around the fish (F), (Abstract, column 2, lines 1-25).

As to claim 4, Arnarson et al. as modified by Storbeck where in Storbeck further discloses (fig. 2) that the sector recordings (images, pictures) from different directions are used to estimate the cross-sectional area of the fish (F), (Abstract, column 2, lines 1-25).

As to claim 5, Arnarson et al. as modified by Storbeck where in Storbeck further discloses (fig. 4) that the recordings (images, pictures) are made in two cross planes with a mutual distance in the direction of movement (6) of the fish (F), (Abstract, column 2, lines 1-25).

As to claim 6, Arnarson et al disclose (fig. 4) a camera (1) that records the reflection from the fish (5) which the camera (1) is arranged adjacent the light source (7, 8) as the scanning is rotated cyclically, (Abstract, column 2, lines 35-45). Arnarson et al is silent to disclose a second camera. Storbeck discloses a CCD camera (4) is connected to a computer (7) to determine the weight of the fish (F), (Abstract, column 1, lines 29-45, column 2, lines 1-25). It would have been obvious for one of ordinary skill in the art to modify Arnarson et al in view of Storbeck to incorporate a second CCD camera in order to detect the reflected light from the fish and to output the reflected light into the processor resulting in analyzing the reflected light to determine the weight of the fish.

As to claim 7, Arnarson et al disclose (fig. 4) that the fish (5) is illuminated (7, 8) around the circumference with a light line as the light is recorded by CCD-camera (1) arranged around the transfer conduit (6), (Abstract, column 2, lines 35-45). Arnarson et al is silent to disclose a second camera. Storbeck discloses a CCD camera (4) is connected to a computer (7) to determine the weight of the fish (F), (Abstract, column 1, lines 29-45, column 2, lines 1-25). It would have been obvious for one of ordinary skill in the art to modify Arnarson et al in view of Storbeck to incorporate a second CCD camera in order to detect the reflected light from the fish and to output the reflected light into the processor resulting in analyzing the reflected light to determine the weight of the fish.

As to claim 8, Arnarson et al disclose (fig. 4) that the CCD-camera (1) is slanted and directed towards the plane for the light line to read the arced reflection lines on the fish (5) as a base of the contour reading, (Abstract, column 2, lines 36-45). Arnarson et al is silent to disclose a second camera. Storbeck discloses a CCD camera (4) is connected to a computer (7) to determine the weight of the fish (F), (Abstract, column 1, lines 29-45, column 2, lines 1-25). It would have been obvious for one of ordinary skill in the art to modify Arnarson et al in view of Storbeck to incorporate a second CCD camera in order to detect the reflected light from the fish and to output the reflected light into the processor resulting in analyzing the reflected light to determine the weight of the fish.

As to claim 9, Arnarson et al disclose (fig. 1, fig. 2) (9) for processing measurements on fish (5) or other aqueous organisms moving in a transfer conduit (6)

at least a camera (1) especially CCD-camera (1) being arranged at the wall of the transfer conduit (6) to record pictures of the fish (5) characterized in that it comprises (fig. 4) at least two light sources (7, 8) evenly arranged around the circumference of the transfer conduit (6) and at least a CCD-camera (1) arranged in the same cross plane and which are evenly arranged around the circumference as the light sources (7, 8) and CCD-camera (1) are connected with a control circuit (9) provided to activate the light sources (7, 8) and the camera (1), (Abstract, column 2, lines 34-45). Arnarson et al is silent to disclose a second camera. Storbeck discloses a CCD camera (4) is connected to a computer (7) to determine the weight of the fish (F), (Abstract, column 1, lines 29-45, column 2, lines 1-25). It would have been obvious for one of ordinary skill in the art to modify Arnarson et al in view of Storbeck to incorporate a second CCD camera in order to detect the reflected light from the fish and to output the reflected light into the processor resulting in analyzing the reflected light to determine the weight of the fish.

As to claim 10, Arnarson et al disclose (fig. 1, fig. 4) that the control circuit (9) is provided to activate at least one light source (7, 8) and at least one CCD-camera (1) at a time in a revolving sequence, (Abstract, column 2, lines 35-45).

As to claim 11, Arnarson et al disclose (fig. 1, fig. 2, fig. 4) that the control circuit (9) is provided to activate one light source (7, 8), one CCD-camera (1) at the light source (7, 8), and one CCD-camera (1) one each side of the light source (7, 8) and preferably a diagonally opposite CCD-camera (1) for each recording sequence and to move (6) the activation by one unit for each step to have a spiral scanning of the fish (5) in motion, (Abstract, column 2, lines 36-46).

As to claim 12, Arnarson et al disclose (fig. 1, fig. 2, fig. 4) an annular light source (7, 8) which surrounds the transfer conduit (6) and marks a narrow light line on the outside of a passing fish (5), (Abstract, column 2, lines 35-45).

As to claim 13, Amarson et al. as modified by Storbeck where in Storbeck further discloses (fig. 2) that lasers (3) having lenses (5) creating light lines are used as light sources (3, 5), (Abstract, column 1, lines 60-67).

As to claim 14, Amarson et al. as modified by Storbeck where in Storbeck further discloses (fig. 2) that the CCD-camera (4) is slanted and directed towards the plane of the light slot to record the light lines three dimensionally, (Abstract, column 1, lines 60-67, column 2, lines 1-7).

As to claim 15, Arnarson et al disclose (fig. 1, fig. 2, fig. 3) that the control circuit (9) is provided to assemble the scanning results to provide a three-dimensional picture (image) of the fish (5) as a base for the volume and weight estimations, (Abstract, column 2, lines 34-45, column 3, lines 13-27).

As to claim 16, Arnarson et al disclose (fig. 1, fig. 2, fig. 4) CCD-camera (1) with adjoining light sources (7, 8) arranged around the circumference of a transfer Conduit (6) to be able to illuminate and record one or several fishes (5) pass through the transfer conduit (6) where each CCD-camera (1) and light source (7, 8) is connected to an optical signal processor (9) for estimation of measured data, (Abstract, column 2, lines 35-45, column 3, lines 13-25). Arnarson et al is silent of explicitly disclosing a second camera and a sectorial data processor and a computer. Sorbeck discloses a CCD-camera (4) is connected to a computer (7) comprises a central processor unit (9)

connected to VME bus and a video processing unit (10), (column 2, lines 8-25). It would have been obvious for one of ordinary skill in the art to modify Arnarson et al in view of Storbeck to incorporate a second camera integrally coupled to the computer processing systems in order to process the reflected light from the fish to determine the volume and weight of the fish and to produce a clear and accurate image of the fish projected on the monitor for further analysis.

As to claim 17, Arnarson et al disclose (fig. 1, fig. 2, fig. 4) recording (1) and estimation of fish (5) and other aqueous organisms characterized by means of a first light source (7, 8) illuminate the inside of a transfer canal (6) for fish (5), by means of CCD-sensor (1), measure the reflected light from the first light source (7, 8) in the form of one or several angle sectors of the fish (5), arranged in the same area as the first light source (7, 8) and measure the light in the form of one or several angle sectors for the fish (5) from the first light source (7, 8) arranged on opposite side of the first CCD-sensor (1), by means of a next light source (7, 8), illuminate the inside of the transfer canal (6) then repeat step (b), and then repeat step (c) for a desired number of measurements (volume, weight), estimate the speed of the fist (5) by dividing moved distance on time, by means of the measured angle sectors estimate a profile of the fish (5), and estimate the total volume and weight of the fish (5) by using the profile, (Abstract, column 1, lines 64-68, column 2, lines 1-7, lines 25-55, column 3, lines 13-25). Arnarson et al is silent to disclose a second camera. Storbeck discloses a CCD camera (4) is connected to a computer (7) to determine the weight of the fish (F), (Abstract, column 1, lines 29-45, column 2, lines 1-25). It would have been obvious for

one of ordinary skill in the art to modify Arnarson et al in view of Storbeck to incorporate a second CCD camera in order to detect the reflected light from the fish and to output the reflected light into the processor resulting in analyzing the reflected light to determine the weight, volume, and profile of the fish.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DON WILLIAMS whose telephone number is (571)272-8538. The examiner can normally be reached on 8:30a.m. to 5:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Don Williams/
Examiner, Art Unit 2878

/Georgia Y Epps/
Supervisory Patent Examiner, Art Unit 2878